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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GUNNAR WAHLSTEN

Appeal 2007-3017
Application 09/554,132
Technology Center 2600

Decided: January 25, 2008

Before KENNETH W. HAIRSTON, ANITA PELLMAN GROSS, and
JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

1 Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-10. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

Appellant invented a system for wireless transmission of digital data between computers using the digital audio broadcast system (DABS) standard. An adaptation circuit is provided on the transmitting end to convert the burst-wise data transmitted from the computer into a continuous output compatible with the DABS system. Similarly, another adaptation circuit is provided on the receiving end to convert the continuous data to an intermittent form compatible with the receiving computer.¹ Claim 1 is illustrative:

1. A method for a wireless transmission of data between one computer and at least one other computer with the aid of a digital transmission system for the wireless transmission of digital data, where a transmitting computer is connected to a digital transmitter and where a receiving computer is connected to a respective digital receiver, said method comprising the steps of:

intermittently transmitting digital information from the transmitting computer to a first adaptation circuit;

storing information received from the transmitting computer for transmission to the receiving computer in a first memory operatively coupled with the first adaptation circuit, wherein the first adaptation circuit is disposed between the transmitting computer and the digital transmitter, substantially continuously outputting information from said first memory to said digital transmitter under a control of an outfeed oscillator in the first adaptation circuit;

substantially continuously transmitting digital information over a digital audio broadcast system from the digital transmitter to a digital receiver operatively coupled with the receiving computer, and wherein said digital transmitter and said digital receiver respectively operate to transmit digital information and to receive digital information over a digital audio broadcast system;

¹ See generally Spec. 3:16-5:11.

feeding the substantially continuously digitally transmitted information received by the digital receiver from the digital receiver into a second memory operatively coupled with a second adaptation circuit disposed between the digital receiver and the receiving computer and that is under a control of an infeed oscillator in the second adaptation circuit;

storing the substantially continuously digitally transmitted information in the second memory;

operating the two oscillators at substantially the same frequency; and

outputting intermittently from the second memory in the second adaptation circuit to the receiving computer information that has been received from the digital receiver and stored in the second memory.

The Examiner relies on the following prior art references to show unpatentability:

Nelson	US 4,852,122	Jul. 25, 1989
Dingsor	US 5,742,641	Apr. 21, 1998
Matsuyama	US 5,754,606	May 19, 1998 (filed May 19, 1995)
Kumar	US 5,949,796	Sep. 7, 1999 (filed Jun. 19, 1996)
Nomura	US 6,563,896 B1	May 13, 2003 (filed Aug. 3, 1999) ²

² This patent does not qualify as prior art under § 102(e) because its filing date (Aug. 3, 1999) is after the international filing date (May 7, 1998) of the present national stage application filed under 35 U.S.C. § 371. See MPEP § 1893.03(b) (noting that the filing date of a national stage application is the international filing date). Although Appellant did not raise this issue on appeal, we nonetheless raise this issue *sua sponte* should further prosecution follow this opinion. In any event, this issue is moot as we do not sustain the Examiner's rejections of the independent claims on the merits for the reasons indicated *infra* in this opinion.

1. Claims 1, 2, 5, 6, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Nelson, Matsuyama, and Kumar.
2. Claims 3, 4, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Nelson, Matsuyama, Kumar, Dingsor, and Nomura.

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

Claims 1, 2, 5, 6, 9, and 10

We first consider the Examiner's rejection of claims 1, 2, 5, 6, 9, and 10 under 35 U.S.C. § 103(a) as unpatentable over Nelson, Matsuyama, and Kumar. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of a patent that claims a combination of known elements, the Court in *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007) explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103

likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.*, 127 S. Ct., at 1740-41. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner’s burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Regarding the independent claims, the Examiner's rejection³ essentially finds that Nelson teaches a wireless data transmission system with every claimed feature except for the following limitations:

- (1) transmitting and receiving information over a digital audio broadcast system;
- (2) communication between computers;
- (3) outfeed and infeed oscillators; and
- (4) operating the two oscillators at substantially the same frequency.

Regarding difference (1), the Examiner contends that this limitation merely constitutes intended use and therefore would have been obvious to the skilled artisan. Alternatively, the Examiner cites Kumar for teaching this limitation (Final Rejection 3).

As to difference (2), the Examiner indicates that since Nelson's data terminal equipment (DTE) devices can be any type of digital equipment that transmits and receives digital data, skilled artisans would have realized that the DTE devices could be computers (Final Rejection 3-4).

With respect to differences (3) and (4), the Examiner notes that Nelson inputs and outputs data with respect to clock signals. The Examiner also indicates that such clock signals conventionally originate from

³ Although the Examiner's Answer omits the specific basis for the rejections in the Grounds of Rejection section (Ans. 3), we nonetheless presume that the Examiner intended to incorporate the specific grounds of rejection articulated in the Final Rejection mailed November 25, 2005 in the Answer.

We remind the Examiner, however, that such incorporations by reference are improper under current practice. *See* MPEP § 1207.02 ("An examiner's answer should not refer, either directly or indirectly, to any prior Office action without fully restating the point relied on in the answer."); *see also Ex parte Metcalf*, 67 USPQ2d 1633, 1635 n.1 (BPAI 2003).

oscillators as evidenced by Matsuyama. According to the Examiner, since Nelson synchronizes the transmitter and receiver, skilled artisans would have therefore understood that the two oscillators would operate at substantially the same frequency (Final Rejection 4).

Appellant argues that, contrary to the Examiner's assertion, Nelson does not disclose or suggest any digital method of over-the-air transmission, only an *analog* method of transmission using conventional FM radios. According to Appellant, Nelson is incapable of digital over-the-air transmission of a continuous data stream between two computers in accordance with the digital audio broadcast system (DABS) standard (App. Br. 13, 14, 16).

In this regard, Appellant emphasizes that data transmitted from conventional computers is inherently incompatible with a DABS system due to the computers' "burst-wise" delivery of data. Because DABS systems use continuous data streams, the computers' burst-wise or intermittent data delivery must be converted to a continuous data stream via respective adaptation circuits on the transmitting and receiving side of the system respectively. Such circuits, Appellant argues, are simply not needed for conventional, analog FM data transmissions, such as those disclosed in Nelson (App. Br. 16-19).

Although Appellant acknowledges that Kumar discloses a DABS for broadcasting high-fidelity music, Appellant emphasizes that Kumar says nothing about wireless communication between computers, let alone using adaptation circuits to convert intermittent to continuous data streams to facilitate such a capability (App. Br. 15). Appellant adds that there is simply

no teaching, suggestion, or motivation to combine the cited references to arrive at the claimed invention (App. Br. 20-23; Reply Br. 1-5).

The Examiner concedes that Nelson's digital data transmission system is not a DABS system, but emphasizes that Kumar was cited for this feature. According to the Examiner, since both Nelson and Kumar use RF signals for their respective transmissions, one of ordinary skill in the art would have used DABS techniques in Nelson's system to improve signal transmission quality (Ans. 3-5).

Regarding the combination of Kumar and Nelson, the Examiner recognizes that digital information in Kumar is *continuously* transmitted and received. The Examiner further acknowledges that digital information in Nelson is *intermittently* transmitted and received to and from the computers (Ans. 4-5). Nevertheless, the Examiner contends that "substantially continuous data" is transmitted in Nelson from the buffer 34⁴ to at least the receiver antenna. According to the Examiner, if Nelson contemplated a DABS, modulation and demodulation would still be needed as evidenced by Kumar (Ans. 5).

The issue before us, then, turns on a relatively narrow question: Even assuming that Nelson and Kumar are properly combinable, would the resulting combination teach or suggest providing *adaptation circuits* that convert intermittently-transmitted digital information to a continuous form and vice-versa in the manner claimed? For the following reasons, we answer this question "no."

Nelson's communication system transmits digital data between data terminal equipment (DTE) 12 wirelessly via RF modems 10 and

⁴ According to the Examiner, Nelson's buffer 34 transforms intermittently transmitted data from the DTE into a continuous form (Ans. 6).

conventional two-way FM radios 18 (Nelson, col. 1, ll. 10-26; Fig. 1). The transmitter or modulation portion of the RF modem includes a buffer 34 which may comprise a shift register. As shown in Figure 2, the buffer 34 receives data from the DTE and transmits the data to a data control multiplexer 30 in accordance with a clock input from DTE clock 36 (Nelson, col. 2, ll. 51-55; Fig. 2).

At the receiving end's modem, the received data is input to a data control demultiplexer 56 which routes data bytes to buffer 58. A phase locked loop 62 provides a clock output to, among other things, the demultiplexer. Data bytes stored in buffer 58 are transmitted to the receiving DTE at the receiving data rate determined by the DTE clock 66 (Nelson, col. 3, ll. 47-66; Fig. 3).

Kumar discloses a DABS where the digital signal generated by the DAB transmitter exists together with a conventional analog FM signal and is emitted from the same antenna system. The analog FM signal and digital signal are unrelated and received independently. Specifically, the digital signal occupies the upper and lower sidebands surrounding the analog FM signal (Kumar, col. 1, ll. 4-17 and 46-66; col. 39, l. 33 - col. 40, l. 35; Figs. 4-5).

Assuming that Nelson's analog FM signal could be combined with a digital signal as suggested by Kumar, we still fail to see any teaching or suggestion to provide *adaptation circuits* on the transmitting and receiving end, respectively, as claimed. In Kumar, the digital data is in the form of a source message 37 which can represent an encoded digital audio signal and ancillary data with a throughput of at least 128 kbit/sec (Kumar, col. 34, l. 67-col. 35, l. 25). As Appellant indicates (App. Br. 15), Kumar is silent as

to whether any computer-to-computer communication occurs in this system, let alone the requisite adaptation circuits needed to facilitate such communication. Furthermore, digital data in Kumar is transmitted continuously -- not intermittently -- a fact readily acknowledged by the Examiner.⁵ In our view, there is simply nothing on this record that would reasonably teach or suggest providing adaptation circuits in this arrangement apart from using impermissible hindsight using Appellant's own disclosure as a blueprint.⁶

As to Nelson, although data is transmitted from the buffers 34 and 58 in the RF modems in accordance with clock signals, we do not find that this functionality reasonably teaches or suggests the recited adaptation circuits. While Nelson does refer to the data downstream from the buffer as a "data stream" (Nelson, col. 2, ll. 62-64), to suggest that these buffers somehow could be modified to provide the requisite transformation of data to enable continuous transmission of data compatible with a DABS system is

⁵ See Ans., at 4 ("It is agreed that in Kumar, digital information is continuously transmitted and continuously received....").

⁶ It is well settled that obviousness determinations "cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the...invention. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in the way they were combined by the inventor." *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998); see also *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) ("It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious...." (internal citations omitted)).

speculative at best. In any event, we find no evidence on this record that would reasonably suggest providing the claimed adaptation circuits in the prior art transmission system apart from Appellant's own disclosure.

For the foregoing reasons, and since the disclosure of Matsuyama does not cure the deficiencies of Nelson and Kumar as noted above, we conclude that the cited prior art does not reasonably teach or suggest providing adaptation circuits to facilitate computer-to-computer communication via a DABS as claimed. Accordingly, we will not sustain the Examiner's rejection of independent claims 1 and 5 or dependent claims 2, 5, 6, 9, and 10 for similar reasons.

Claims 3, 4, 7, and 8

With regard to the rejection of claims 3, 4, 7, and 8, since we find that the disclosures to Dingsor and Nomura do not cure the deficiencies noted above with respect to the independent claims, the obviousness rejection of claims 3, 4, 7, and 8 is also not sustained.

DECISION

We have not sustained the Examiner's rejections with respect to any of the claims on appeal. Therefore, the Examiner's decision rejecting claims 1-10 is reversed.

Appeal 2007-3017
Application 09/554,132

REVERSED

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